INDEX TO VOLUME 107

Names of contributors and of authors of books reviewed are printed in CAPITALS. Titles in quotes, standing alone, are of contributed papers. Titles in *italic*, standing alone, are of books reviewed. Names of new genera, species, varieties, and combinations are printed in **bold face**. Numbers in **bold face** refer to pages where such a name is accompanied by a description or illustration. Numbers in *italic* refer to pages on which a name is listed as a synonym. Page number for a plant entity is given for only the first time it appears in any one article.

"A comparison of the relative naturalization ability of two *Schinus* species in southern California. I: Seed germination," 51.

"A comparison of the relative naturalizing ability of two *Schinus* species (Anacardiaceae) in southern California. II: Seedling establishment," 232.

"A possible mode of action for morphoregulatory hydroxyproline-proteins," 325.

"A record of environmental change during recent millennia in the Hackensack tidal marsh, New Jersey," 514.

ADAMS, R. M.: (see Sauleda, R. P.), 544.

Allelopathy, effect on seed germination in *Schinus*, 51.
frond exudate flavonoids as agents of, in *Pityrogramma*, 146.
importance of flavonoids and related compounds on growth and plant distribution, 116.

Alternaria, on leaf surface of mustard, 447.

altitudinal replacement, of Digger Pine by Ponderosa Pine, in the Sierra Nevada, 487.

ammonium ion, as morphoregulatory factor in leafy liverworts, 325.

Ammophila, occurrence of *Carex kobomugi* with, at Sandy Hook, New Jersey, 431.

An Atlas of the Biologic Resources of the Hudson Estuary, 88.

Anacardiaceae, 51, 232.

Andrena, pollination of *E. propullans* and *E. albidum* by, 181.

"Annette [Hochberg] Hervey, 1920–1980," 546.

ants, nectar-robbing, effect on pollination in *Asclepias*, 24.

Appalachian Mountains, *Leptodontium viticulosoides* spreading on dead Fraser Fir in, 7.
Parnassia asarifolia in, 19.

Aquilegia canadensis, effects of restricting root growing space, decreasing nutrient supply, and increasing water stress on the phenetics of, 220.

Arenaria patula, leaf morphology as affected by heavy metal and SO_2 pollution, 9.

Arisaema triphyllum, pollen movement in, by thrips, 539.

Asclepias, phenetic determination of taxonomic status, *A. giffordii*, 496.
pollination effectiveness reduced in, by nectar-robbing ants, 24.

Asimina triloba, pollinator limitation, as factor in fruit production by, 401.

Aster macrophyllus, seasonal nutrient concentration changes in, 47.

autogamy, rain-assisted, in *Liparis Loeselii*, 525.

auxin, and cell elongation in hepatics, 339.
and control of development in hepatics, 308.

azetidine, as a morphoregulatory agent in leafy hepatics, 325.

Balsam Woolly Aphid, infestation on Fraser Fir, and spread of *Leptodontium viticulosoides*, 7.

BANKS, JO ANN: The reproductive biology of *Erythronium propullans* Gray and sympatric populations of *E. albidum* Nutt. (Liliaceae), 181.

BASILE, D. V.: A possible mode of action for morphoregulatory hydroxyproline-proteins, 325.

BASILE, D. V.: Symposium introduction, 279.

BASKIN, C. C.: (see Baskin, J. M.), 429.

BASKIN, J. M.: Role of seed reserves in the persistence of a local population of *Sedum pulchellum:* a direct field observation, 429.

Beech-Maple forest, plot distribution in understory, sampling designs compared, 530.

BELL, DAVID T.: Gradient trends in the streamside forest of Central Illinois, 172.

blepharoplast, of bryophyte spermatozoids, ultrastructure of, 281; 392.

biomass allocation in *Sedum lanceolatum* phenotypic patterns of variation, sexual and asexual, 65.

Bommeria, flavonoid evidence for generic lines in, 128.

Botanists of the Eucalypts, 456.

breeding system, rain-assisted autogamy, in *Liparis Loeselii*, 525.

bryophytes, conducting systems of, 298.
development of, 308.
evolution of, 298.
phylogeny and spermatozoid ultrastructure, 281.

BOYLE, E. M.: Vascular anatomy of the flower, seed and fruit of *Lindera Benzoin*, 409.

Brassica campestris, leaf surface mycoflora of, 447.

bumblebees, importance of ultraviolet absorption by *Chlorogalum* flowers to pollination by, 163.

CAIAZZA, N. A., JR. and J. A. QUINN: Leaf morphology in *Arenaria patula* and *Lonicera japonica* along pollution gradient, 9.

calcareous habitats, and mosses as indicators of Pleistocene terrestrial environments, 373.

calcicole mosses, as indicators of Pleistocene calcareous terrestrial environments, 373.

California, relative naturalization ability of two *Schinus* species in, 51.
water repellency in chaparral soils of, 42.

Carex kobomugi, at Sandy Hook, New Jersey, 431.

"*Carex kobomugi* Ohwi at Sandy Hook, New Jersey," 431.
CARMICHAEL, DOROTHY P.: A record of environmental change during recent millennia in the Hackensack tidal marsh, New Jersey, 514.
CAROTHERS, Z. B. and J. G. DUCKETT: The bryophyte spermatozoid: a source of new phylogenetic information, 281.
Carpinus, dispersion pattern of, in Louisiana, 71.
CARR, S. G. M.: Botanists of the Eucalypts (Review), 456.
CARR, S. G. M.: Handbooks of the Flora of Papua New Guinea, vol. 1 (Review), 456.
CARR, S. G. M.: Plant Taxonomic Literature in Australian Libraries (Review), 456.
CARR, S. G. M.: Western Australian Plant Names and their Meanings (Review), 456.
CARTER, M. E. B.: (see Skeen, J. S.), 1.
CATLING, P. M.: Rain-assisted autogamy in *Liparis Loeselii* (L.) L. C. Rich. (Orchidaceae), 525.
"Cell elongation in hepatics: the seta system," 339.
Celtis, the dispersion pattern of two species, in Louisiana, 71.
Ceratopteris, spore germination, gametophyte development, and habitat selection, of tropical species, 57.
chaparral, water repellency in soils of, 42.
CHARNEY, JEFFREY D.: Hemlock-hardwood community relationships in the Highlands of southeastern New York, 249.
chilling requirement, protection from fall seed germination, in *Parnassia asarifolia*, 19.
Chlorogalum angustifolium, 163; *grandiflorum*, 163; *parviflorum*, 163; *pomeridianum*, 163.
Chlorogalum, ultraviolet absorption by flowers of, 163.
chromatography, use in fern flavonoid identification, 116.
use in fern flavonoid separation, 113.
Cladosporium, on leaf surface of mustard, 447.
climate, effect on Florida's vegetation zones, 189.
effect on variation in leaf size, 154.
climax forests, yellow poplar as component of, in Piedmont of Georgia, 1.
cluster analysis, for phenetic determination of *Asclepias giffordii* taxonomic status, 496.
colonization, palynological evidence for effect on vegetational change, in northern New Jersey, 432.
Colorado, biomass allocation of *Sedum lanceolatum* in, 65.
community diversity, and habitat occupation by mosses, 346.
community structures, and habitat occupation by mosses, 346.
competition, and habitat occupation by mosses, 346.
competitive equilibrium, and niche differentiation, 238.
conducting tissues, of bryophytes, phylogenetic problems with respect to, 392.
"Control of development in hepatics," 308.
COOPER-DRIVER, GILLIAN A.: The role of flavonoids and related compounds in fern systematics, 116.
Cornus canadensis, seasonal nutrient concentration changes in, 47.
Cornus florida, response to canopy openings by, 29.
"Correlation of some climate statistics with distribution of broadleaved forest zones in Florida, U.S.A.," 189.
Costa Rica, *Asclepias* pollination and ant nectar-robbing in, 24.
CROCKETT, L. J.: Annette [Hochberg] Hervey, 1920–1980, 546.
DAVIS, R. F.: Plant Physiology (Review), 87.
DAY, F. P., JR.: The Great Dismal Swamp (Review), 454.
deciduous forest, plot sampling designs compared, 530.
development, problems in bryophytes, 392.
"Differentiation of bryophyte conducting tissues: structure and histochemistry," 298.
Digger Pine, altitudinal replacement of, by Ponderosa Pine, in the Sierra Nevada, 487.
DILCHER, DAVID L.: (see Dolph, G. E.), 154.
dioecism, in *Arisaema triphyllum*, and pollination by thrips, 539.
2,2'-dipiridyl, as a morphoregulatory agent, in leafy hepatics, 325.
disease, role of flavonoids as a protective agent against, 116.
dispersal, of *Leptodontium viticulosoides* on dead Fraser Fir, in Appalachian mountains, 7.
dispersion patterns, tree populations in southern Louisiana hardwood forest, 71.
disturbance, by gypsy moths, causing canopy gaps in mature oak forest, New Jersey, 29.
the importance to non-equilibrium coexistence of plants, 238.
DOLPH, GARY E.: Variation in leaf size with respect to climate in the tropics of the Western Hemisphere, 154.
drought, its relation to the naturalizing ability of two *Schinus* species, in southern California, 232.
DUCKETT, JEFFREY G.: (see Carothers, Z. B.), 281.
eastern Northern America, and rain-assisted autogamy in *Liparis Loeselii*, 525.
ecology, alpine, of *Sedum lanceolatum*, 65.
ecotones, in the hemlock-hardwood regions of southeastern New York, 249.
EHRENFELD, J. G.: Understory response to canopy gaps of varying size in a mature oak forest, 29.
Erythronium albidum, 181; *propullans*, 181.
Erythronium, reproductive biology of, 181.
extension, and wall extension in liverwort setae, 339, 392.
F_{max} test, for phenetic determination of *Asclepias giffordii* taxonomic status, 496.
FARMER, R. E., JR.: Germination and juvenile growth characteristics of *Parnassia asarifolia*, 19.
fern allies, role of flavonoids and related compounds in, 116.
fern ecology, importance of flavonoids to, 113.
fern taxonomy, importance of flavonoids to, 113.

ferns, role of flavonoids and related compounds in, 116.
fire, relation to water repellency, in chaparral soils, 42.
"Flavonoid analysis of the *Pityrogramma triangularis* complex, 134.
"Flavonoid evidence for generic lines in selected gymnogrammoid ferns," 128.
flavonoids, allelopathic agents in *Pityrogramma*, 146.
analysis of the *Pityrogramma triangularis* complex, 134.
evidence for generic lines, in selected gymnogrammoid ferns, 128.
importance to fern ecology, 113.
importance to fern taxonomy, 113.
in fern systematics, 116.
Flora Europaea, vol. 5, 556.
Flora of Baja California, 553.
floral display, and pollinator limitation, in pawpaw (*Asimina triloba*), 401.
Florida, correlation of distribution of broadleaved forest zones with climate statistics, 189.
flower, vascular anatomy of, in *Lindera Benzoin*, 409.
fluctuating reservoirs, plant species common to shores of, northern Great Plains, 506.
fluvial erosion, as record of environmental change, in Hackensack tidal marsh, New Jersey, 514.
foliar belts, relation of climate to leaf size in neotropics, 154.
foraminifera, as record of environmental change, in Hackensack tidal marsh, New Jersey, 514.
forest ecology, and canopy gaps in mature oak forest, 29.
forest fire, effect on seasonal nutrient concentration in forest herbs, 47.
forest zones, broadleaved evergreen forests in central Florida, 189.
Fraser Fir, killed by Balsam Woolly Aphid, and spread of *Leptodontium viticulosoides*, 7.
"Frond-exudate flavonoids as allelopathic agents in *Pityrogramma*," 146.
frond exudates, as allelopathic agents in *Pityrogramma*, 146.
frond-surface, analysis of flavonoids from, of the *Pityrogramma triangularis* complex, 134.
fruit, vascular anatomy of, in *Lindera Benzoin*, 409.
fruit production, and pollinator limitation, in pawpaw (*Asimina triloba*), 401.
gametophyte, development and habitat selection, in ferns, 57.
gap dynamics, effect of canopy openings on understory-species, 29.
Georgia, yellow-poplar in Piedmont forests of, 1.
"Germination and juvenile growth characteristics of *Parnassia asarifolia*," 19.
"Germination of plant species common to reservoir shores in the northern Great Plains," 506.
GIANNASI, DAVID E.: Flavonoid evidence for generic lines in selected gymnogrammoid ferns, 128.
gibberellin, and developmental control in hepatics, 308.
GILMARTIN, AMY JEAN: Numerical phenetic determination of the taxonomic status of *Asclepias giffordii*, 496.
glandular trichomes, used in studying frond-surface flavonoids of the *Pityrogramma triangularis* complex, 134.
gradient analysis, study of forest vegetation in the Sangamon River basin of east-central Illinois, 172.
"Gradient trends in the streamside forest of central Illinois," 172.
Great Plains, plant species common to reservoir shores of northern, 506.
GRELLER, ANDREW M.: Correlation of some climate statistics with distribution of broad-leaved forest zones in Florida, U.S.A., 189.
GRIGAL, D. F. and L. F. OHMANN: Seasonal change in nutrient concentrations in forest herbs, 47.
growth analysis, of seedlings of *Parnassia asarifolia*, 19.
growth patterns, of Digger Pine and Ponderosa Pine, on western slopes of the Sierra Nevada, 487.
gymnogrammoid ferns, flavonoid evidence for generic lines in, 128.
Gymnopteris, flavonoid evidence for generic lines in, 128.
gypsy moths, effect of, in producing canopy openings in mature oak forest, 29.
habitat, occupation by mosses, and niche theory, 346.
Hackensack tidal marsh, record of environmental change in, 514.
HAMMOND, H. D.: Survey of Canadian Herbaria (Review), 557.
Handbooks of the Flora of Papua New Guinea, vol. 1, 456.
heavy metal (Cd, Cu, Pb, Zn) pollution effect on leaf morphology in *Arenaria* and *Lonicera*, 9.
Hemionitis, flavonoid evidence for generic lines in, 128.
Hemlock, community relationships in the Highlands of southeastern New York, 249.
"Hemlock-hardwood community relationships in the Highlands of southeastern New York," 249.
herb layer, plot distribution in understory, and comparison of sampling designs, in Beech-Maple forest, 530.
Heterothrips arisaemae (Thysanoptera), pollen movement by, in *Arisaema triphyllum*, 539.
HOFFMAN, G. R., M. B. HOGAN and L. D. STANLEY: Germination of plant species common to reservoir shores in the northern Great Plains, 506.
HOGAN, M. B.: (see Hoffman, G. R.), 506.
HORENSTEIN, J. E.: (see Yeaton, R. I.), 487.
hydroids, differentiation of, in bryophytes, 298.
hydroxyproline, found in morphoregulatory proteins in leafy liverworts, 325.
hydroxyproline-proteins, morphoregulatory, in leafy liverworts, 325, 392.
JERNSTEDT, JUDITH A.: Ultraviolet absorption by flowers of *Chlorogalum* (Liliaceae), 163.

JOLLS, C. L.: Phenotypic patterns of variation in biomass allocation in *Sedum lanceolatum* Torr. at four elevational sites in the Front Range, Rocky Mountains, Colorado, 65.
karyotypes, of species of *Chlorogalum*, 163.
KNOPS, J. F. and R. J. JENSEN: Morphological and phenolic variation in a three species community of Red Oaks, 418.
LAROCHE, GERMAIN: The effects of restricting root growing space, decreasing nutrient supply and increasing water stress on the phenetics of *Aquilegia canadensis* L. (Ranunculaceae), 220.
"Leaf morphology in *Arenaria patula* and *Lonicera japonica* along a pollution gradient," 9.
leaf morphology, in *Arenaria patula* and *Lonicera japonica*, as affected by heavy metal and SO_2 pollution, 9.
leaf size, variation in, with respect to climate in the tropics of the Western Hemisphere, 154.
leaf surface mycoflora, studies on, 447.
leafy liverworts, hydroxyproline morphoregulatory proteins in, 325.
Leptodontium, spreading on dead Fraser Fir, after Balsam Woolly Aphid infestation, 7.
leptoids, differentiation of, in bryophytes, 298.
life zones, use in correlating leaf size distribution with climate, 154.
light requirement, for germination of *Parnassia asarifolia* seeds, 19.
Lindera Benzoin, vascular anatomy of flower, seed and fruit, 409.
Liparis Loeselii, rain-assisted autogamy in, 525.
Liriodendron tulipifera, component of Piedmont forests in Georgia, 1.
liverwort sporophyte, seta system, 339.
LLOYD, R. M.: (see Warne, T. R.), 57.
Lonicera japonica, leaf morphology as affected by heavy metal and SO_2 pollution, 9.
Louisiana, population dispersion patterns of trees in hardwood forest of, 71.
MAKAREWICZ, J. C.: An Atlas of the Biologic Resources of the Hudson Estuary. (Review), 88.
MARAVOLO, N. C.: Control of development in hepatics, 308.
marine transgression, as record of environmental change, in Hackensack tidal marsh, New Jersey, 514.
Matteuccia, spore germination, gametophytic development, and habitat selection in this temperate species, 57.
milkweeds, pollination system, as affected by nectar-robbing ants, 24.
MILLER, N. G.: Mosses as paleoecological indicators of lateglacial terrestrial environments: some North American studies, 373.
Minnesota, seasonal nutrient concentration changes in forest herbs in, 47.
morphogenesis, in hepatics, 308.
problems of, in hepatics, 392.
"Morphological and phenolic variation in a three species community of Red Oaks," 418.
morphological variation, in Red Oaks, 418.
morphoregulatory proteins, hydroxyproline, in leafy liverworts, 325.
moss, *Leptodontium viticulosoides*, on dead Fraser Fir, after Balsam Woolly Aphid infestation, 7.
mosses, habitat occupation, and niche theory, 346.
"Mosses as paleoecological indicators of lateglacial terrestrial environments: some North American studies," 373.
MULLER, WALTER H.: (see Nilsen, E. T.), 57, 232.
multilayered structure, of bryophyte spermatozoids, 281.
naturalization, the relative ability of two *Schinus* species, in southern California, 51, 232.
nectar-robbing, by ants, effect on *Asclepias* pollination, 24.
Neotropics, leaf size variation in life zones of, 154.
New Jersey, canopy openings in mature oak forest in, 29.
New Jersey, *Carex kobomugi* at Sandy Hook, 431.
Hackensack tidal marsh, record of environmental change, 514.
northern, vegetational change, palynological evidence for, 432.
N-fixation, and bryophyte-cyanobacteria symbioses, 392.
niche, relevance of habitat occupation by mosses to, 346, 392.
NILSEN, E. T. and W. H. MULLER: A comparison of the relative naturalization ability of two *Schinus* species in southern California. I: seed germination, 51.
NILSEN, E. T. and W. H. MULLER: A comparison of the relative naturalizing ability of two *Schinus* species (Anacardiaceae) in southern California. II: Seedling establishment, 232.
"Non-equilibrium coexistence of plants," 238.
non-equilibrium coexistence, the importance of this to succession, 238.
North America, Pleistocene terrestrial environments, mosses as indicators of, 373.
nucellus, vascular anatomy of, in *Lindera Benzoin*, 409.
"Numerical phenetic determination of the taxonomic status of *Asclepias giffordii*, 496.
nutrient cycling, seasonal, in forest herbs, 47.
nutrient redistribution, seasonal changes in forest herbs, 47.
nutrient supply, effects of decreasing, on *Aquilegia canadensis*, 220.
OHMANN, L. F.: (see Grigal, D. F.), 47.
Orchidaceae, *Liparis*, 525.
Ponthieva, 544.
rain-assisted autogamy in *Liparis Loeselii*, 525.
taxonomic status of *Ponthieva brittonae*, 544.
paleoecology, mosses as indicators of, 292.
Pleistocene terrestrial environments, mosses as indicators of, 373.
palynology, and evidence for vegetational change in northern New Jersey, 432.
patch dynamics, and the concept of non-equilibrium coexistence, 238.
"Patterns of habitat occupation in mosses-relevance to considerations of the niche," 346.

PATTERSON, D.: Herbert Kaltman (1914–1979), 83.
pawpaw (*Asimina triloba*), pollinator limitation of, and fruit production, 401.
Pellia, cell elongation in the setae of, 339.
Pennsylvania, heavy metal and SO_2 pollution affecting leaf morphology in, 9.
phenolics, variation in Red Oaks, 418.
"Phenotypic patterns of variation in biomass allocation in *Sedum lanceolatum* Torr. at four elevational sites in Front Range, Rocky Mountains, Colorado," 65.
phenotypic plasticity, source of observed differences in *Arenaria* and *Lonicera* leaf morphology, 9.
phylogenetic relationships, of *Lindera Benzoin*, 409.
phytochemical taxonomy, use of frond-surface flavonoids for, 134.
PICKETT, S. T. A.: Non-equilibrium coexistence of plants, 238.
Piedmont forests in Georgia, yellow-poplar a component of, 1.
pines, altitudinal replacement of, in the Sierra Nevada, California, 487.
Pityrogramma, flavonoid analysis of, 134.
frond exudate flavonoids in, as allelopathic agents, 146.
Plant Physiology, 2nd ed., 87.
Plant Taxonomic Literature in Australian Libraries, 456.
Pleistocene, terrestrial environments, mosses as indicators of, 373.
"Plot distribution in the understory of a Beech-Maple forest: a comparison of two contrasting sampling designs," 530.
plot sampling, plot distribution in understory of Beech-Maple, comparison of designs, 530.
pollen, as record of environmental change, in Hackensack tidal marsh, New Jersey, 514.
"Pollen movement and reproduction in *Arisaema triphyllum*," 539.
pollination, importance of ultraviolet absorption by flowers of *Chlorogalum* to, 163.
in *Arisaema triphyllum*, by *Heterothrips arisaemae*, 539.
in *Asclepias*, effectiveness of reduced by nectar-robbing ants, 24.
"Pollinator limitation, fruit production, and floral distribution in pawpaw (*Asimina triloba*)," 401.
pollution gradients, of heavy metals and SO_2, cause of changes in leaf morphology, 9.
Ponderosa Pine, altitudinal replacement by, of Digger pine, in the Sierra Nevada, 487.
Ponthieva brittonae, 544, *racemosa*, 544.
P. brittonae, taxonomic status of, 544.
P. racemosa, taxonomic status of, 544.
"Population dispersion patterns of trees in a southern Louisiana hardwood forest," 71.
population persistence, in *Sedum pulchellum*, role of seed reserves, 429.
predation, role of flavonoids as protective agents against, 116.
principal component analysis (PCA), for phenetic determination of *Asclepias giffordii* taxonomic status, 496.
Progress in Phytochemistry, vol. 5, 88.
Quercus, dispersion pattern of, in Louisiana hardwood forest, 71.
morphological variation in, 418.
QUINN, J. A.: (see Caiazza, N. A.), 9.
RAGSDALE, H. L.: (see Skeen, J. S.), 1.
ragweed (*Ambrosia*), and palynological evidence for vegetational change in northern New Jersey, 432.
RAI, B.: (see Singh, D. B.), 447.
"Rain-assisted autogamy in *Liparis Loeselii* (L.) L. C. Rich. (Orchidaceae)," 525.
rain-assisted pollination, and autogamy in *Liparis loeselii*, 525.
REEDER, C. G.: Flora of Baja California (Review), 553.
REEDER, J. R.: (see Reeder, C. G.), 553.
regeneration, in Piedmont forests of Georgia, involving yellow-poplar, 1.
"Relationships between stand age and water repellency of chaparral soils," 42.
reproduction, in *Arisaema triphyllum*, as affected by pollen movement by thrips, 539.
reproductive biology, pollination, breeding, and populations of *Erythronium propullans* and *E. albidum*, 181.
reservoirs, plant species common to, in northern Great Plains, 506.
resource limitation, as factor in fruit set, in pawpaw (*Asimina triloba*), 401.
river flood frequency, use in gradient analysis of vegetation in the Sangamon River basin of east-central Illinois, 172.
ROGERS, R. S.: Plot distribution in the understory of a Beech-Maple forest; a comparison of two contrasting sampling designs, 530.
root growing space, effects of restriction, on *Aquilegia canadensis*, 220.
RUSSELL, E. W. B.: Vegetational change in northern New Jersey from precolonization to the present: a palynological interpretation, 432.
RUST, R. W.: Pollen movement and reproduction in *Arisaema triphyllum*, 539.
SAULEDA, R. P. and R. M. ADAMS: The taxonomic status of *Ponthieva brittonae* Ames (Orchidaceae), 544.
SCHEIRER, D. C.: Differentiation of bryophyte conducting tissues: structure and histochemistry, 298.
SCHEMSKE, D. W.: (see Willson, M. F.), 401.
Schinus, a comparison of the naturalizing ability of two species in southern California, 51, 232.
"Seasonal change in nutrient concentrations in forest herbs," 47.
Sedum lanceolatum, variation in response to environmental changes with elevation, 65.
Sedum pulchellum, persistence of a local population, seed reserves and, 429.
seed, vascular anatomy of, in *Lindera Benzoin*, 409.
seed germination, characteristics in two *Schinus* species, in California, 51.

of plant species common to reservoir shores, northern Great Plains, 506.
seed reserves, in *Sedum pulchellum*, and population persistence, 429.
seedling establishment, and relative naturalizing ability of two *Schinus* species in southern California, 232.
self-pollination, rain-assisted, in *Liparis Loeselii*, 525.
seta elongation, and cell elongation in hepatics, 339.
shrubs, effect of canopy openings on, 29.
Sierra Nevada, replacement of Digger Pine by Ponderosa Pine, on western slopes of, 487.
SINGH, D. B. and B. RAI: Studies on the leaf mycoflora of mustard (*Brassica campestris* L. cv. YS-42), 447.
SKEEN, J. S., M. E. B. CARTER and H. L. RAGSDALE: Yellow-Poplar: The Piedmont Case, 1.
SMITH, DALE M.: Flavonoid analysis of the *Pityrogramma triangularis* complex, 134.
soil organic matter, relationship to species present and stand age, 42.
species diversity, and habitat occupation in mosses, 346.
species diversity, gradient trends of, as affected by river flood frequencies in east-central Illinois, 172.
spectroscopy, use in fern flavonoid identification, 113.
spermatozoid, bryophyte, and phylogeny, 281.
spore architecture, use in gymnogrammoid fern distinction, 128.
spore, germination and habitat selection, in ferns, 57.
sporopollenin, nature and deposition of, in liverworts, 392.
"Spread of *Leptodontium viticulusoides* (Bryopsida) after Balsam Woolly Aphid infestation of Fraser Fir," 7.
STALTER, R.: *Carex kobomugi* Ohwi at Sandy Hook, New Jersey, 431.
STANLEY, L. D.: (see Hoffman, G. R.), 506.
STAR, AURA E.: Frond exudate flavonoids as allelopathic agents in *Pityrogramma*, 146.
STAR, A. E.: Progress in Phytochemistry, vol. 5 (Review), 88.
statistical analysis, of variation in Red Oaks, 418.
stratigraphy, as record of environmental change, in Hackensack tidal marsh, New Jersey, 514.
streamside forest, gradient analysis study of, in east-central Illinois, 172.
"Studies on the leaf surface mycoflora of mustard (*Brassica campestris* L. cv. YS-42)," 447.
succession, as affected by factors leading to non-equilibrium, 238.
yellow-poplar in, in Piedmont forests of Georgia, 1.
sulfur dioxide pollution, effect on leaf morphology in *Arenaria* and *Lonicera*, 9.
Survey of Canadian Herbaria, 557.
SWAIN, TONY: The importance of flavonoids and related compounds in fern taxonomy and ecology: An overview of the symposium, 113.
taxonomic history, of *Ponthieve brittonae* and *P. racemosa*, 544.
TAYLOR, J.: Using "lower" plants to solve "higher" plant problems: a synopsis, 392.
temperature, as determinant of Florida forest zones, 189.
effect on growth of *Parnassia asarifolia* seedlings, 19.
TERAMURA, A. H.: Relationships between stand age and water repellency of chaparral soils, 42.
"The altitudinal replacement of Digger Pine by Ponderosa Pine on the western slopes of the Sierra Nevada," 487.
"The bryophyte spermatozoid: a source of new phylogenetic information," 281.
"The effects of restricting root growing space, decreasing nutrient supply and increasing water stress on the pheneties of *Aquilegia canadensis* L. (Ranunculaceae), 220.
The Great Dismal Swamp, 454.
"The impact of nectar-robbing ants on the pollination system of *Asclepias curassavica*," 24.
"The importance of flavonoids and related compounds in fern taxonomy and ecology: An overview of the symposium," 113.
"The reproductive biology of *Erythronium propullans* Gray and sympatric populations of *E. albidum* Nutt. (Liliaceae)," 181.
"The role of flavonoids and related compounds in fern systematics," 116.
"The role of spore germination and gametophyte development in habitat selection: temperature responses in certain temperate and tropical ferns," 57.
"The taxonomic status of *Ponthieva brittonae* Ames (Orchidaceae)," 544.
THOMAS, R. J.: Cell elongation in hepatics: the seta system, 339.
TORREY BOTANICAL CLUB, Constitution and By-Laws of, 78.
Tsuga canadensis, spread in communities in southeastern New York, 249.
Ulmus, dispersion pattern of, in Louisiana hardwood forest, 71.
ultrastructure, of bryophyte spermatozoids, 281, 392.
ultraviolet absorption, by flowers of *Chlorogalum*, 163.
"Ultraviolet absorption by flowers of *Chlorogalum* (Liliaceae)," 163.
understory, two contrasting sampling designs for, compared, in Beech-Maple forest, 530.
"Understory response to canopy gaps of varying size in a mature oak forest," 29.
upland forest, hemlock spreading in, southeastern New York, 249.
"Using 'lower' plants to solve 'higher' plant problems: synopsis," 392.
"Variation in leaf size with respect to climate in the tropics of the Western Hemisphere," 154.

vascular anatomy, phylogenetic implications, in *Lindera Benzoin*, 409.

"Vascular anatomy of the flower, seed and fruit of *Lindera Benzoin*," 409.

"Vegetation change in northern New Jersey from precolonization to the present: a palynological interpretation," 432.

vegetational change, palynological evidence for, in northern New Jersey, 432.

VOSS, E. G.: Flora Europaea, vol. 5. (Review), 556.

WARNE, T. R. and R. M. LLOYD: The role of spore germination and gametophyte development in habitat selection: temperature responses in certain temperate and tropical ferns, 57.

water potential, effect of, on replacement of Digger Pine by Ponderosa Pine, western slopes of the Sierra Nevada, 487.

water repellency, in chaparral soils, related to stand age, 42.

water stress, effects of increasing, on *Aquilegia canadensis*, 220.

WATSON, M. A.: Patterns of habitat occupation in mosses—relevance to considerations of the niche, 346.

Western Australian Plant Names and their Meanings, 456.

WHIPPLE, S. A.: Population dispersion patterns of trees in a southern Louisiana hardwood forest, 71.

WILLSON, M. F. and D. W. SCHEMSKE: Pollinator limitation, fruit production and floral display in pawpaw (*Asimina triloba*), 401.

WYATT, R.: The impact of nectar-robbing ants on the pollination system of *Asclepias curassavica*, 24.

YEATON, RICHARD I., R. W. YEATON, and J. E. HORENSTEIN: The altitudinal replacement of Digger Pine by Ponderosa Pine on the western slopes of Sierra Nevada, 487.

YEATON, R. W.: (see Yeaton, R. I.), 487.

"Yellow-Poplar: The Piedmont Case," 1.

ZANDER, R. H.: Spread of *Leptodontium viticulosoides* (Bryopsida) after Balsam Woolly Aphid infestation of Fraser Fir, 7.